

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Claims 1-26 (Cancelled).

27. (New) A hydrodynamic bearing assembly, comprising:

a column shaft having an outer surface and a top and bottom surfaces, said shaft extending in a longitudinal direction;

a thrust plate secured on the bottom surface of said shaft so as to extend in a perpendicular direction to the longitudinal direction, said thrust plate having a circumference end and an upper and lower surfaces;

a cylindrical hollow sleeve arranged around said shaft with a predetermined radial gap, said sleeve having an inner surface and a thrust opposing surface opposing to said thrust plate;

a land portion defined on the thrust opposing surface of said sleeve at a downstream position of the fluid; and

a plurality of spiral grooves formed on a surface selected from a group consisting of the upper surface of said thrust plate and the thrust opposing surface of said sleeve, extending from at a position corresponding to said land portion to an area capable of having said spiral grooves formed thereon;

wherein upon a relative rotation of said sleeve and said shaft, a thrust gap is formed in fluid communication with the radial gap and between the thrust opposing surface of said sleeve and the upper surface of said thrust plate, and each of said spiral grooves varying its depth for reducing the dynamic pressure generated adjacent to said land portion.

28. (New) The hydrodynamic bearing assembly according to claim 27,
wherein each of said spiral grooves is deeper as it extends from said land portion to the
area capable of having said spiral grooves formed thereon so that the dynamic pressure generated
across the thrust gap is substantially even.

29. (New) The hydrodynamic bearing assembly according to claim 27,
wherein at least one of the thrust opposing surface of said sleeve and the upper surface of
said thrust plate is made of ceramics material.

30. (New) The hydrodynamic bearing assembly according to claim 29,
wherein the ceramics material is selected from a group consisting of alumina, zirconia,
silicon carbide, silicon nitride, and sialon.

31. (New) A spindle motor incorporating the hydrodynamic bearing assembly according
to claim 27.

32. (New) A memory device incorporating the spindle motor according to claim 31.

33. (New) A bar code scan reader incorporating the spindle motor according to claim 31.